



United States
Department of
Agriculture

Forest Service



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Project 30414

DECISION NOTICE

Middle River II Project

Management Areas 3.4
Houston/Rolla/Cedar Creek Ranger District
Mark Twain National Forest
Callaway County, Missouri

TABLE OF CONTENTS

I.	DECISION.....	2
A.	INTRODUCTION	2
B.	DECISION.....	2
II.	REASONS FOR THE DECISION	3
A.	SUMMARY OF ENVIRONMENTAL ISSUES AND CONCERNS.....	4
B.	OTHER ALTERNATIVES CONSIDERED AND REASONS WHY THEY WERE NOT SELECTED	5
III.	PUBLIC INVOLVEMENT	5
IV.	ENVIRONMENTAL JUSTICE	6
V.	FINDING OF NO SIGNIFICANT IMPACT	6
VI.	FINDINGS RELATED TO OTHER LAWS AND REGULATIONS.....	8
VII.	ADMINISTRATIVE REVIEW OR APPEAL	9
VIII.	IMPLEMENTATION DATE	9
IX.	CONTACT PERSON	9
X.	SIGNATURE AND DATE.....	9
XI.	APPENDIX A - MITIGATION MEASURES.....	11
XII.	APPENDIX B - MAPS	17

I. DECISION

A. INTRODUCTION

The Environmental Assessment (EA) for the Middle River II Project is available for public review at the Houston/Rolla/Cedar Creek Ranger District Office located at the USDA Service Center, 4549 State Road H, Fulton, Missouri, 65251, (573) 592-1400 or may be obtained online at <http://www.fs.fed.us/r9/marktwain/projects/project.htm>.

This document, prepared by an Interdisciplinary team (IDT), discusses the reasons for taking action in the Middle River Project Area, which include moving the area towards the Desired Future Condition (DFC) for the wildlife habitats described in the Forest Plan; improving watershed health, improving recreation and associated actions. The EA also discusses environmental effects of the proposed treatments which provide open/semi-open habitat through mechanical means, prescribed burning, and grazing; uneven-aged timber management, tree planting, old growth designation, soil and watershed improvements, road reconstruction, recreation access improvements, and invasive plant control.

The EA evaluates resource management alternatives on approximately 1300 acres of National Forest land. It includes areas identified by the Forest Service as Compartments 9 and 10, which are managed under Forest Plan standards and guidelines for Management Prescriptions 3.4. The project area is located on National Forest land in T. 46 N., R. 10 W., in parts of sections 13, 14, 24, 25 and 36 in Callaway County. It lies approximately 7 miles southwest of Fulton, Missouri. Please refer to attached maps.

B. DECISION

The purpose of the Decision Notice in the National Environmental Policy Act (NEPA) process is to identify a selected alternative and provide reasons why that alternative was selected over others considered in the EA. The Middle River II EA analyzed a total of three alternatives and, in my opinion, provides all the information I need to make a reasonable, informed decision about managing that area for the next 10 years in a way that complies with the intent of the Mark Twain Forest Plan.

I have decided to implement the actions described as Alternative 3. The attached maps illustrate the location of the proposed activities and are hereby made a part of this decision document. I have also decided to implement the mitigation measures found in Appendix A of this document. In view of the needs identified in the EA, I have decided to implement the following actions in Middle River Project Area:

The following activities will be used to maintain and enhance wildlife habitat and the associated ecosystems and their functions:

Treatment Description	Measures (estimated)
Wildlife Habitat Improvement Projects	
1. Provide Open/Semi-Open Habitat	430 Ac
2. Designate Old Growth	189 Ac
3. Provide Woodland Habitat in Oak Sawtimber with 20-30% Forbs, Grasses and Shrubs Ground Cover (through Uneven-Aged Timber Management)	460 Ac
4. Contribute to Woodland Habitat in Above Category through Prescribed Burning	250 Ac
5. Provide Temporary Woodland Habitat in the 0-9 Age Class (through projects 3 & 4)	69 Ac
6. Breach pond to Provide Amphibian Habitat	1 Pond
Watershed Health Projects	
7. Fence Woodlands to Exclude Livestock	Add Fence as Needed
8. Reconstruct Pond	1 Pond

9. Road Reconstruction, FR 1686	.9 Miles
10. Improve Pasture Access with Gravel	4 Accesses
11. Close Non-System Road	.4 Mile
12. Control Erosion with Plantings or Structures	3 Areas
13. Close Wells	2 Wells
Recreation Management	
14. Improve Parking Areas	5 Areas
15. Improve Interpretive Signing	1 Sign
16. Improve Dispersed Access	1 Gate
Associated and Connected Actions	
17. Prescribed Fire Line Construction	1 Mile
18. Reduce Non-Native Invasive Species with Herbicides	Spot Treat
19. Reduce Competition in Hardwood Plantings with Herbicides	Spot Treat

II. REASONS FOR THE DECISION

I have chosen Alternative 3 because the analysis indicates it is the best alternative mixture of activities to enhance and improve wildlife habitat, while providing watershed health improvements, wood products and recreational opportunities.

My reasons for choosing Alternative 3 are as follows:

1. The analysis displays how it works towards the objectives of Management Prescription 3.4 of the Mark Twain Forest Plan for maintaining and enhancing wildlife habitat diversity for native and naturalized vertebrates, recreational opportunities, and moderate to high production of resources, including firewood and timber products.
2. Of all the alternatives, Alternative 3 best addresses issues brought forward by both the Interdisciplinary Team and the public while also moving the area towards meeting the desired future conditions (DFC) of the five wildlife habitats (EA, Wildlife Section, Chapter 3).
3. Alternative 3 would provide the best opportunity to manage for old growth in a block near Middle River and other drainages (EA, Chapter 3).
4. This alternative would provide diverse open/semi-open wildlife habitat (with forbs and flowering plants), allow management of open lands with prescribed fire, mechanical means and grazing, and still move the project area towards the DFC for this habitat type (EA, Chapters 3 and 4).
5. Alternative 3 would create approximately 460 acres of enhanced wildlife habitat through uneven-aged management in woodland habitats of oak, oak-pine and pine saw timber with 20-30% forbs, grass and shrub ground cover. Two hundred fifty acres of prescribed burning will also contribute to this habitat. This will increase the biodiversity in the understory while enhancing this habitat for a variety of Management Indicator Species and Regional Forester's Sensitive Species (EA, Chapter 3).
6. Alternative 3 would improve the watershed health of the Project Area through fencing, road reconstruction, erosion control measures, and hardening of pasture crossings. (EA, Chapter 3).
7. Alternative 3 would have less visual impact because stand boundary changes would allow for more management of old growth near side-drainages, reducing the temporary visual impact of harvesting in these areas. (EA, Chapter 3).
8. Timber products and firewood would be provided.

9. Invasive and noxious weeds would be treated through a combination of control methods including manual, mechanical, cattle grazing, prescribed fire and spot treatment with approved herbicides. This will allow reduction of the spread of invasive and noxious weeds in critical openland habitat and would improve survival of hardwood trees planted. Through the spot treatments, fewer than 5 acres would be treated with herbicides.
10. Critical resources such as threatened and endangered species, cultural resources, caves, springs, and sensitive habitats, are either benefited or unaffected by proposed activities in Alternative 3.
11. There are little or no discernible effects to air and water quality, social economics, recreation, and visual quality.
12. Alternative 3 is a balanced mix of treatments and activities to improve ecosystem health.
13. Herbicide use is permitted in the Mark Twain National Forest Land and Resource Management Plan “only after alternative analysis clearly demonstrates that pesticide use is the most effective means to meet overall management objectives.” (MTNF Forest Plan, IV-23) The Middle River II EA discloses in the analysis that a combination of methods to control invasive species, including spot treatments with herbicides, would be the most effective and efficient treatment and improve the ecosystem health in the area (EA Chapters 3 and 4).

I am confident, based on my review of the EA, that Alternative 3 provides the most beneficial effects for the forest ecosystem in the Middle River Project Area.

A. SUMMARY OF ENVIRONMENTAL ISSUES AND CONCERN

The range of alternatives developed by the IDT shows that a good effort was made to design alternatives that were responsive to the variety of issues and concerns identified by the Interdisciplinary Team and the Public during scoping and the 30-day comment period. Specifically these issues and concerns were:

Openlands Management: About one-third of the project area is in open/semi-open wildlife habitat. This openland habitat consists of native warm and cool season grasses, forbs, wildflowers, other grasses, woody vegetation and shrubs. Some of these areas were proposed to be planted to trees or allowed to develop into more woody habitat by not burning or grazing them in Alternative 2. Alternative 3 was developed to address this issue because several members of the public and the Interdisciplinary Team would like to see some of these areas left open for this habitat type, which is more common to northern Missouri and the native prairie regions of the state. Alternative 3 would still move the project area towards the DFC, but with approximately 30 acres more left open than in Alternative 2.

Old Growth Habitat: Concerns arose related to the amounts and distribution of proposed old growth wildlife habitat in the Middle River Project Area. Proposed old growth was grouped near Middle River drainages and older stands. Through public input, field trips with the public, and IDT discussion, Alternative 3 was developed to adjust some stand boundaries to create new stands which would incorporate these steeper drainages into old growth and protect the aesthetic qualities to the area. Old growth wildlife habitat guidelines for the 3.4 Management Area in the Forest Plan are 10-15%, and Alternative 3 would provide approximately 15 percent.

Effects: One commenter brought up how adjacent landholdings affected National Forest status and management in the Middle River Project Area. Although this comment was not carried through as an issue, the environmental effects of all proposed projects were analyzed in the EA. Adjacent landholdings were considered in the analysis and are also considered in the cumulative effects of various resources in the EA. These effects are discussed in Chapters 3 and 4 of the EA.

B. OTHER ALTERNATIVES CONSIDERED AND REASONS WHY THEY WERE NOT SELECTED

Five different alternatives were considered and three were selected for detailed analysis. The three alternatives that were analyzed include:

Alternative 1 - This is the no action alternative. This is a viable alternative and responds to the concerns of those who want no vegetative management activities (i.e. "no logging") to take place. Current and on-going management activities would continue such as existing openlands management.

Rationale - I did not select this alternative because it does not address the following: (1) Decline in woodland habitats in oak, oak/pine, and pine forest with 20 to 30% forbs, grass and shrub ground cover; (2) Loss of woodland habitats in the 0-9 year age class; (3) Watershed health improvements; (4) Moving towards the DFC by providing less open/semi-open wildlife habitat; (5) Additional old growth habitat; (6) Noxious and invasive weed control utilizing the most effective means available.

Alternative 2 - This alternative is the proposed action. It was designed to move the area towards the DFC in wildlife habitat objectives, improve watershed health, provide improved dispersed recreational opportunities, and treat noxious weeds.

Rationale - I did not select this alternative because it does not address the issues as well as Alternative 3. It does not address old growth blocks as well as Alternative 3. It moves the openlands habitat toward the DFC a bit more than Alternative 3, but does not address the issues brought forward by the public to leave more of this diverse wildlife habitat available.

Other alternatives that were considered but were not carried through for analysis include:

An alternative similar to Alternative 3 but with the addition of Stand 27 in Compartment 9 was considered. This alternative was generated from comments received during the public comment period. This alternative was not selected because it would increase the old growth habitat beyond the DFC. Also, even though uneven-aged harvest is proposed in this stand in Alternative 3, visual and harvesting mitigations would be utilized to maintain the visual integrity of the stand, and should have minimal effect on the viewshed in the long term.

An alternative similar to the proposed action that did not commercially harvest the trees was considered. This alternative was developed to respond to public comments related to commercial logging of National Forest System Lands. Cut trees would not be removed in this alternative. This alternative was not carried further into analysis because the IDT was concerned about the forest health and wildland fire issues, particularly the fuel load of this dead material on the ground, which would increase the fire danger. This alternative also does not follow Forest Service policy as defined by the Multiple Use Sustained Yield Act, June 12, 1960, which states, "It is the policy of the Congress that the National Forests are established and shall be administered for... timber....".

III. PUBLIC INVOLVEMENT

A scoping letter with maps and project description was mailed to everyone on the district mailing list and adjacent neighbors on January 25, 2003 (97 addresses) to invite comments on the project. This project has also appeared in the forest-wide Schedule of Proposed Actions (SOPA). Comments received after the scoping period were accepted and evaluated in the development of issues and alternatives to the proposed action. The District received 8 responses to the scoping document. All comments received were reviewed and evaluated by the IDT.

Several field visits with interested parties were conducted by members of the IDT. These tours included a site visit with a wildlife biologist from the Missouri Department of Conservation, who then provided comments during the scoping period. A tour with a representative from Mark Twain Forest Watchers was also conducted after the close of the scoping period. This individual looked at a variety of proposed projects including the openlands habitat management as well as other wildlife habitat management. He visited the site other times and

provided comments at scoping, additionally after the scoping period had closed, as well as during the 30-day comment period. A tour after the scoping period closed was conducted with several members of the Sierra Club to discuss the project proposals. A comment letter from the Sierra Club was received following this tour during the 30-day comment period.

The purpose of soliciting comments during the scoping period is to determine whether there are any new or unresolved issues which may affect a proposed action. Issues and concerns originating from public responses and internal agency concerns are identified for analysis. Issues identified from comments during scoping, from the IDT, and from comments received from individuals following field visits were used to develop proposed alternatives. On August 6, 2003, a letter with a proposal for the Middle River Project was mailed to everyone on the district mailing list and adjacent neighbors to invite timely, substantive comments on the proposed projects, in accordance to our revised regulations for notice, comment, and appeal (36 CFR 215). Legal Notice of this 30-day comment period was published August 12, 2003 in the *Fulton Sun*, Fulton Missouri. Twelve comments were received, with nine of them timely. These comments were incorporated into this document in the Summary of Environmental Issues and Concern. A listing of the comments and the Forest Service responses to the comments can be found in the project file.

An EA was prepared and a decision notice was signed on February 18, 2004. On April 23, 2004, I decided to withdraw that decision in order to clarify documentation on some key points in the project records and decision notice. This action resulted in the EA titled Middle River II completed in June, 2004.

IV. ENVIRONMENTAL JUSTICE

I have determined that this project is being conducted in a manner that does not exclude persons from participating in, denying the benefits of, or subjecting persons to discrimination because of their racial, ethnic or economic status. The activities carried out by this decision will not have disproportionately high and adverse health or environmental effects on minority or low-income populations.

Callaway County has an 8.5 percent poverty level and contains an 8 percent minority population. Based on the 2000 Census Bureau information the percent of low-income persons in Callaway County does not qualify it as an environmental justice community (EA, Chapter 3).

Of the alternatives evaluated for the Middle River Project, it is my opinion that none of the alternatives would pose disproportionately adverse impact on the economic or social fabric of the local communities. Alternatives 2 and 3 would generate the highest economic return by providing for recreational activities, timber harvest and grazing (EA, Chapter 3).

V. FINDING OF NO SIGNIFICANT IMPACT

I have determined, based on the discussion of effects in the Environmental Analysis and from past experience with similar activities, that these actions are not a major federal action, individually or cumulatively, and will not significantly affect the quality of the human environment. No additional analysis or studies need be conducted for me to make this determination. Therefore, an environmental impact statement is not needed. This determination is based on the following factors:

1. There will be no significant effects, beneficial or adverse, resulting from this project. The environmental effects are discussed in the Environmental Assessment, Chapter 3 and 4. The beneficial effects include: a) enhancing the diversity of wildlife habitats; b) improving the biological diversity of grasses, forbs and shrubs in the forest understory; c) improving watershed health within the project area; d) improving recreational opportunities; e) treating invasive plants; and f) providing timber products and firewood to benefit the local communities.

The beneficial effects of the action do not bias my finding of no significant environmental effects.

2. Public health and safety are minimally affected by the proposed actions. Public safety will be improved by improving the road condition, providing improved walk-in access and safe places to park vehicles. Effects of the alternative courses of action are displayed in the Environmental Assessment, Chapter 3 and 4.
3. There will be no significant adverse effects on prime farmlands, floodplains, wetlands, historic or cultural resources, wild and scenic rivers, ecologically critical areas, civil rights, women, or minority groups. The Environmental Assessment in Chapter 3 and 4 discusses the anticipated effects of implementing these actions.
4. Based on public participation and the involvement of resource specialists, I do not believe effects on the quality of the human environment to be highly controversial. This does not mean that the decision to proceed with the project will be acceptable to all people, as some will probably find that their needs and interests are not served by the proposed actions. However, it is my professional judgment that the significant biological, social and economic issues have been addressed well enough for this project for me to make an informed decision. The proposed actions are similar to other management activities recently implemented in the same vicinity; therefore the results are reasonably predictable. (EA, Chapter 3 and 4)
5. There are no known effects on the human environment that are highly uncertain or involve unique or unknown risks. Timber harvesting, timber stand improvements, wildlife habitat improvement projects, watershed improvement projects, and grazing have been conducted throughout this area for many years enabling us to predict fairly well what the effects of these actions may be. Environmental effects described in the assessment have been analyzed in enough detail to determine predictable results.
6. These actions are similar to other management activities previously implemented and do not set a precedent for other projects that may be proposed to meet the goals and objectives of the Forest Plan.
7. There are no known significant cumulative effects between this project and other projects implemented or planned on areas separated from the affected area of this project beyond those evaluated in the Final Environmental Impact Statement, or any amendments, for the Forest Plan. Cumulative effects are evaluated for each resource in the effects section of the EA (Chapter 3 and 4). Past Forest Service activities in the last twenty years were reviewed and determined not to have an appreciable cumulative effect to the Middle River project area.
8. Based on the archaeologist's analysis and concurrence from the State Historic Preservation Office and because any sites or structures eligible for the National Register of Historic Places will be avoided, there will be no adverse effects on heritage resources, or eligibility for listing in the National Register of Historic Places (EA, Chapter 3 and Project Record).
9. Based on the Middle River Biological Evaluation (EA, Appendix G) which analyzed impacts to federally-listed Threatened and Endangered Species, the selected actions will not have any additional effects beyond those stated in the 1999 Programmatic BA and June 23, 2000 US Fish and Wildlife Service Biological Opinion. The U.S. Fish & Wildlife Service concurred on November 17, 2003 (EA, Appendix G) with our determination that this project is in compliance with the Biological Opinion (June 23, 1999). The concurrence letter states "We concur with your conclusion that there are no additional effects to federally listed species associated with the Middle River Project beyond those that were previously disclosed..." and "...we would concur with a determination of "the only species that may occur within the project area are Indiana bat, gray bat, Topeka shiner, running buffalo clover and bald eagle." "And we concur with your determination that the Middle River Project may affect, but is not likely to adversely affect the gray bat." "We also concur with your determination that the project will have no effect on the bald eagle, Topeka shiner and running buffalo clover..." In conclusion... "The actions and effects associated with the proposed Middle River Project are consistent with those identified and discussed in the Service's Programmatic BO. After reviewing the size and scope of the project, the environmental baseline, the status of Indiana bat and its potential occurrence within the project area, the effects of the

action; and any cumulative effects, it is the Service's biological opinion that this action is not likely to jeopardize the continued existence of the Indiana bat."

10. The actions do not threaten a violation of federal, state, or local law, or requirements imposed for the protection of the environment. The Environmental Assessment displays compliance with intent of the Forest Plan, Environmental Protection Agency, and Missouri Department of Natural Resources, Missouri State and National Historic Preservation Act, etc. (Also, see section VI below).

VI. FINDINGS RELATED TO OTHER LAWS AND REGULATIONS

It is my finding that the actions of this decision comply with the requirements of the National Forest Management Act of 1976, NFMA implementing regulations in 36 CFR Section 219, and the Mark Twain National Forest Land and Resource Management Plan.

HARVESTING ON SUITABLE LANDS

I have determined that the land on which harvesting has been proposed is suitable for timber production as described in 16 U.S.C. 1604(k) and 36 CFR 219.14 and 36 CFR 219.27(c)(1).

The land is forested land capable of producing crops of industrial wood (Forest Plan paged IV-115-124 and IV-193-206).

Technology is available to harvest timber from the land without irreversible resource damage to soil productivity or watershed conditions.

The land, which is regenerated, can be adequately restocked within 5 years of the final harvest (Forest Plan IV-41).

The land is not withdrawn from timber production by an Act of Congress, the Secretary of Agriculture, or the Chief of the Forest Service. (Forest Plan pages IV-115-124 and IV-193-206).

The land has not been deemed inappropriate for timber production due to assignment to other resource uses or considerations of cost efficiency (Forest Plan pages IV-115-124 and IV-193-206).

NATIONAL FOREST MANAGEMENT ACT REQUIREMENTS:

All proposals involving the manipulation of tree cover for any purpose comply with the seven requirements found in 36 CFR 219.27(b). Specifically, they:

- (1) are best suited to multiple use goals for the area (Forest Plan IV-115 to IV-123, IV-193 to 206);
- (2) occur on lands where adequate reforestation can be assured (Forest Plan IV-4);
- (3) were chosen after consideration of effects on residual trees and adjacent stands (EA, Chapter 3)
- (4) were not chosen primarily because they gave the greatest dollar return or timber output (EA, Chapters 3 and 4);
- (5) avoid impairment of site productivity and ensure soil and water resource conservation (EA, Chapters 3 and 4);
- (6) provide desirable effects on all affected resources (EA, Chapters 3 and 4); and
- (7) employ practical timber harvest techniques (Forest Plan Appendix D; and transportation systems (EA, Chapter 3).

ADMINISTRATIVE REVIEW OR APPEAL

This decision is subject to appeal pursuant to 36 CFR 215.11 (as published in the Federal Register, June 4, 2003). A written Notice of Appeal must be postmarked or received within **45 days** after the date of publication of this decision in the *Fulton Sun* at the following address:

USDA Forest Service, Eastern Region
ATTN: Appeals Deciding Officer, Ronnie Raum
Gaslight Building, Suite 700
626 E. Wisconsin Avenue
Milwaukee, WI 53202-4616

or Email: appeals-eastern-regional-office@fs.fed.us
Subject: Middle River II Project

or Fax: 414-944-3963
ATTN: Appeal Deciding Officer, USDA Forest Service, Eastern Region

Normal business hours (for hand-delivered appeals) are 7:30 AM - 4:00 PM, Mon-Fri. Electronic appeals should be in TXT, RTF, DOC, PDF or other Microsoft Office-compatible formats. Appeals must meet the content requirements of 36 CFR 215.14.

IMPLEMENTATION DATE

If no appeal is received, implementation of this decision may occur on, but not before, 5 business days from the close of the appeal filing period. If we receive an appeal, implementation may not occur for 15 business days following the date of the appeal deposition (36 CFR 215.9)

CONTACT PERSON

Further information about this decision can be obtained several ways:

- Telephone: Contact, Carol Trokey Houston/Rolla/Cedar Creek Ranger District Office during business hours (8:00 a.m. – 4:30 p.m. CST) at (573) 592-1400.
- In writing: Contact, Houston/Rolla/Cedar Creek Ranger District, USDA Service Center, 4549 State Road H, Fulton, MO 65251 Attention: Carol Trokey
- Facsimile requests: Address to: Carol Trokey, Project Team Leader at (573) 592-1450.
- E-mail requests: mailroom_r9_mark_twain@fs.fed.us

Please Specify Cedar Creek-NEPA-Middle River II on your subject line.

SIGNATURE AND DATE

/s/John C. Bisbee
JOHN C. BISBEE
District Ranger
Houston/Rolla/Cedar Creek Ranger District

25 June 2004
Date

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APPENDIX A – MITIGATION MEASURES

The following are mitigation measures in addition to the Forest Plan standards and guidelines. Mitigation measures identified with a “T” pertain to timber harvesting and an “M” refers to mechanical treatments. Those identified with an “F” pertain to fire.

Mitigation Measures - Heritage Resources (CR):**CR1 (T, M, F): Site Avoidance**

Site avoidance is the preferred mitigation action pursuant to the Forest Plan, Section IV-30, 31 [also FSM 2361.21(2)]. Avoidance of cultural resources will be understood to require the retention of such properties in place and their protection from effects resulting from the undertaking [MOU 2002, Section II, H (2a, 2b)]. Effects will be avoided by implementing the following specific actions:

- (1) Establishing buffer zones around those sites in areas where harvest activities will take place [to include timber harvest as well as construction of skid trails and landings]; buffer zones will be of sufficient size to ensure that the integrity of the characteristics and values which contribute to, or may potentially contribute to, the properties’ significance will not be affected.
- (2) Routing temporary roads away from archaeological sites.

CR2 (F): Site Protection during Prescribed Burns**(1) Firelines**

Those archaeological sites located along existing woods roads that may be used as fire lines will be protected by hand-clearing those sections of the road/fireline that crosses the sites. Those sections of roads crossing archaeological sites will be cleared using leaf blowers and leaf rakes. There will be no removal of soil or disturbance below the ground surface during fireline preparation.

Archaeological sites and features that may be located along proposed routes of dozer-constructed firelines will be avoided by routing firelines around archaeological sites. Sites that lie along previously constructed dozer lines from past burns will be protected during future burns by hand clearing those sections of line that cross the sites, rather than re-clearing the lines using heavy equipment.

(2) Burn Unit Interior

Combustible elements at potentially eligible sites in the burn unit interiors will be protected from damage during the burns by removing fuels from the feature vicinity, and, where necessary, by burning out an area around the feature prior to igniting the main burns. Burning out is accomplished by constructing a set of two hand lines, approximately 30 to 50 ft. apart, around the feature and by then burning the area between the two lines while the burn is carefully monitored. A fuel-free zone is thereby created around the combustible elements. Any combustible features that might be located in a burn unit will also be fully documented with photographs and field drawings prior to the burn. A Heritage Resources Specialist will attend the pre-burn briefings, and Forest Service personnel will accompany any non-Forest Service crews that may participate in the burn.

Those sites containing above ground, non-combustible cultural features and exposed artifacts would be protected by removing by hand, any concentrations of fuels that might have built up on the sites and features. Where such fuel concentrations are not present, no mitigation is required.

No mitigation measures are proposed for any sites in the burn interior that do not contain combustible elements or other above ground features [as described in (a) and (b) above], because it is not expected that the burns proposed for the Middle River project area will harm these sites.

(3) Post-Burn Monitoring

Post-burn monitoring will be conducted at selected sites in order to assess the actual effects of the burns on the sites against the expected effects and to check for indirect effects at the sites following the burn. State Historic Preservation Office (SHPO) consultation will be carried out with respect to mitigation for any sites that suffer unexpected damage during the burn, or that are suffering damage from indirect effects following the burn.

CR3 (M): Road Maintenance

Where Forest Service Roads scheduled for maintenance cross archaeological sites, road work will be confined to the existing roadway and ditches.

CR4 (T,M,F): Survey of Landings, Temporary Roads, Skid Trails, Roads to be Reconstructed, Dozer-Constructed Firelines

If activities take place outside those areas not already included in cultural resource surveys, prior to project implementation, the cultural resource surveys will be completed. Appropriate measures as noted in CR1, CR2, and CR5 will be applied prior to project implementation to protect any archaeological sites that may be located in these areas. Consultation with the Missouri SHPO will be completed prior to project implementation.

CR5 (T, M, F): Other Mitigation Measures

If it is not feasible to completely avoid an archaeological site (CR1) and if mitigation measures outlined in CR2 and CR3 are not applicable, then the following steps will be taken:

(1) In consultation with the Missouri State Historic Preservation Officer (SHPO), the site(s) will be evaluated against National Register of Historic Places significance criteria (36 CFR 60.6) to determine if the site is eligible for, or appears to be eligible for, inclusion in the National Register of Historic Places.

(2) In consultation with the Missouri SHPO, mitigation measures will be developed which will lessen, or minimize, the adverse effects on the site(s), so that a finding of No Adverse Effect results.

(3) The agreed-upon mitigation measures will be implemented prior to initiation of project activities that have the potential to affect the site(s).

CR6 (T,M,F): Discovery of Cultural Resources during Project Implementation

Although the cultural resource surveys completed for this project are designed to locate all archaeological sites that might be eligible for the National Register, such sites may go undetected for a variety of reasons. Pursuant to the provisions found in 36 CFR 800.13, should any previously unidentified cultural resources be discovered during project implementation, activities that may be affecting that resource will be halted immediately. The resource will be evaluated by a professional archaeologist and consultation will be initiated with the Missouri SHPO, as well as the Advisory

Council on Historic Preservation, if required, to determine appropriate actions for protecting the resource and for mitigating any adverse effects on the resource. Project activities will not be resumed until the resource is adequately protected and until agreed-upon mitigation measures are implemented with SHPO approval.

Mitigation Measures - Air Quality (A):**A1 (F)**

Prescribed burning would be completed during weather conditions that facilitate smoke dispersal. The public would be informed of the planned burning days and Forest Service employees would monitor for public safety hazards, if needed, along public travel ways.

Mitigation Measures – Fisheries (FS)**FS1**

The foot trail crossing Middle River in the northeastern portion of the Project Area will be visited at least once per year to determine if any trail rutting is occurring. If trail rutting is occurring, erosion control measures, such as hardening of the site, water diversion berms, or limiting use at the site should be taken.

Mitigation Measures – Soil and Water (SW):**SW1 (T & M)**

Temporary road and main skid trails would be located on the ground by Forest Service personnel prior to harvest operations, avoiding layouts that concentrate runoff into draws, ephemeral drainages, sinkholes or watercourses.

SW2 (T & M)

Proper grade and water control structures would be constructed and maintained on skid trails. Specifications that are indicated in the Missouri Department of Conservation's "Missouri Watershed Protection Practice" would be followed. Roads would not drain directly onto skid trails or into stream channels.

SW3 (T)

When logging is complete additional slash would be pulled onto skid trails.

SW4 (T)

Forest Service would suspend skidding during wet periods, when excessive rutting and churning of the soil begins or when runoff from skid trails is turbid and no longer infiltrates the forest leaf litter within a short distance from the skid trail.

SW5 (F)

Prescribed burn units should have as little mechanical disturbance to the soil before and just after burning as possible. Equipment would not use stream channels as "roads." Where stream crossing is unavoidable it would be done in locations that would create the least impact on stream banks and beds.

SW6 (F)

Fire lines created with dozers would not be placed in riparian areas, fens, wetlands, or other sensitive habitats.

SW7 (F)

Fire lines would be seeded when necessary with a cover crop suited to area objectives and would be fertilized, if necessary, with standard fertilizer immediately after construction or as soon afterwards as to allow the best chance of germination. Water bars would be constructed in accordance with the Missouri Department of Conservation's "Missouri Watershed Protection Practice" to minimize water movement along fire lines.

SW8 (T)

Trees anchoring stream banks of any distinct channel would not be cut unless they are species that are known to "sprout" from a cut tree's roots, even if the stream does not require a buffer zone. This may include channels that are the result of road drainage ditches.

SW9 (T & M)

Reconstructed and temporary road constructions, which have potential to cause severe erosion, would have additional water protection mitigations as follows: Temporary roads that cross drainages would be closed as soon after the harvest or treatment as possible. All crossings would be constructed at right angles to the channel at locations chosen to have the least impact as possible on the stream channel and banks. Slash filter would be placed uphill from any drainage and used as filter at the outside of the water-bar nearest the drainage. If the crossing location is soft, it would be reinforced with aggregate.

SW10 (T & M)

No mechanical disturbance of the soil would occur on slopes greater than 35%.

SW11 (T, F & M)

Stands with soils that have perched water tables would have little to no mechanical disturbance to wet soil.

Mitigation Measures - Vegetation (V):**V1 (T)**

Log landings, major skid trails, and other areas where mineral soil is exposed would be seeded and fertilized if necessary for cover crop only. No non-native species would be seeded to provide permanent vegetation.

V2 (F)

Prescribed burn plans would incorporate burning conditions that best meet specific management area objectives to reduce fuel loads, stimulate forest regeneration, meet visual standards, and protect sensitive species. Prescribed burns may be conducted during the dormant (leaf-off) season, September 30 through April 15 according to standards and guidelines under 5100 Fire Management, and as frequently as necessary to meet management objectives as determined through annual evaluations of initial and subsequent burn treatments.

V3 (T & M)

A buffer zone of at least 50 feet in radius would be retained in association with seeps, fens, springs, and any other special features or habitats. Skidding and decking would be prohibited within these buffer zones.

Mitigation Measures - Wildlife (WL):**WL1 (F)**

In order to reduce and/or eliminate any potential destruction of nests from flames or disturbance from smoke, no prescribed burning would occur between the dates of April 15 and September 30. This mitigation measure is for the Pileated woodpecker, Ovenbird, Turkey, Bobwhite Quail, Orchard Oriole, Wood Thrush, Ruffed grouse, Indigo bunting and the Eastern Bluebird.

WL2 (F, T)

To the maximum extent possible and logistically practical, maintain, on average, a minimum of 23 suitable roost trees per acre for bats on forested acreage. Suitable roost trees contributing to the minimum listed above may include the following: 1) live shagbark and shellbark hickories ≥ 9 " dbh, 2) lightning struck trees ≥ 9 " dbh and trees, 3) dead or dying trees ≥ 9 " dbh with at least 10% exfoliating or defoliating bark, 4) den or cull trees, and 5) live trees ≥ 26 " dbh. Of the 23 roost trees maintained, to the maximum extent possible and logistically practical, retain existing dead trees ≥ 20 " dbh and all live trees ≥ 26 " dbh unless they are an immediate human safety hazard. A canopy closure of 60-80% must be maintained. Special precautions are to be taken to protect large snags (≥ 16 " dbh) which are not safety hazards; such snags should be protected from fire and smoke. Wind direction, speed, mixing height and transport winds are to be used during burn planning and implementation to minimize smoke intensity and duration of burns.

WL3 (T&F)

Upon the discovery of an eagle communal night roost or eagle nest, or Indiana or Gray bat maternity sites at any time during the course of activities described in this EA, activities would be halted until the USFW Service has been contacted. At this point consultation may be reinitiated and an amended BE may be prepared. This could lead to a designated protective buffer around the roost or site in accordance with the Forest Plan.

WL4 (T)

A buffer zone of at least 50 feet in radius would be retained in association with seeps, fens, springs, and any other special features or habitats. Skidding and decking would be prohibited within these buffer zones.

WL5 (T)

No cutting of any Butternut tree(s) would occur in the Middle River Project area. This is to protect and retain any potential Butternut trees that have not already been killed by the Butternut Canker.

Mitigation Measures - Visuals (VS):

In order to reduce potential negative impacts to the view, the specified mitigating measures would be used for the following areas in the designated foreground seen area for any action alternative:

VS1 (T & M)

The negative visual impacts will be mitigated concurrently with or immediately after each phase or activity. Mitigating measures will be completed for each cutting unit or project area before beginning activities in the next sequential block or project area in the same corridor/viewshed. The total lapsed time from initiation of activities to completion of obligations specified by a contract or a project prescription shall not exceed two years for any single cutting unit or project area. Emphasis will be placed on completing all work within these areas in a systematic manner within the shortest practical time (page IV-31 Forest Plan).

VS2 (T)

All harvest areas would be laid out on the ground in a manner that would reflect natural lines and be visually subordinate to the characteristic landscape.

Mitigation Measures – Invasive Plants (IP):

IP1: Prevention measures prescribed in Forest Service Guide to Noxious Weed Prevention Practices (USFS 2001) would be followed during agency activities to minimize invasive plant introduction and spread on the Forest. This would be the single most effective and least expensive weed management option available.

IP2: If restoration of treated areas included establishing new plants, this would be accomplished by broadcast seeding of native species.

IP3: All sites treated for non-native invasive species would be monitored as described in the monitoring section in Chapter 4 of the EA. A monitoring plan would be prepared as part of each treatment activity. Baseline monitoring to determine existing conditions would occur prior to treatment. Implementation monitoring would occur during treatments to insure design and safety standards are followed. Monitoring would be designed to insure that surveys for occupied and potential habitats for sensitive plants and animals have been conducted prior to weed treatment activities.

IP4: Projects would be supervised by state-certified applicator who would be responsible for insuring safe handling, worker protection, application and disposal of herbicides.

IP5: Herbicides would be applied only by ground-based equipment in spot treatments.

IP6: All requirements in a Safety and Spill Plan would be followed.

IP7: Areas treated with pesticides will be signed, as appropriate, to ensure users are informed of possible exposure.

APPENDIX B – MAPS